

SECTION 1725 INDUCTIVE DETECTION LOOPS

1725-1 DESCRIPTION

Furnish and install inductive detection loops with loop slot sealant, loop wire, conduit with fittings and all necessary hardware.

1725-2 MATERIAL

Refer to Division 10.

Item	Section
Inductive Detection Loops	1098-8

Furnish material, equipment and hardware under this section that is pre-approved on the ITS and Signals QPL.

Provide the Engineer a Type 3 material certification and MSDS for the sealant in accordance with Article 106-3.

1725-3 CONSTRUCTION METHODS

All work performed in this section shall be done in the presence of the Engineer.

Notify Engineer one week before installing inductive detection loops.

Coordinate sawcutting and loop placement with pavement markings. For new construction or for resurfacing, install inductive detection loops before placing final layer of surface course. On unmarked pavement, pre-mark locations of stop lines and lane lines before locating inductive detection loops.

Before sawcutting, pre-mark inductive detection loop locations and receive approval. Sawcut pavement at approved pre-marked locations. Do not allow vehicles to travel over unsealed loop slots.

Install conduit with bushings from edge of pavement to junction box. Do not sawcut through curb.

Remove all loose material and wash saw slots with a high-pressure method using an air and water mixture. Dry saw slots with compressed air. Clear saw slots of jagged edges and protrusions. Seat loop conductor at bottom of saw slot without damaging loop wire.

Before sealing loop conductors, test that impedance from the loop wire to ground is at least 100 megohms. For each location with inductive loops, submit a completed Inductive Detection Loop & Grounding Test Results form and place copy in controller cabinet. Ensure all loops are included on form. The form is located on the Department's website.

Embed loop conductors in saw slot with loop sealant. Seal saw slot and dispose of excess sealant in an environmentally safe manner.

Between where loop conductor pairs leave saw cut in pavement and junction boxes, twist loop conductor pairs a minimum of 5 turns per foot. Permanently label each twisted pair in the junction box with nylon cable tie using indelible ink. Indicate loop number and loop polarity on the tie.

1725-4 MEASUREMENT AND PAYMENT

Inductive Loop Sawcut will be measured and paid as the actual linear feet of inductive loop sawcut furnished, installed and accepted.

No measurement will be made of loop slot sealant, loop wire, conduit and conduit fittings as these will be incidental to furnishing and installing inductive detection loops.

Section 1726

1 Payment will be made under:

Pay Item

Inductive Loop Sawcut

Pay Unit

Linear Foot

SECTION 1726 LEAD-IN CABLE

1726-1 DESCRIPTION

5 Furnish and install lead-in cable with all necessary hardware to be used in conjunction with,
6 but not limited to, inductive detection loops, pedestrian pushbutton assemblies,
7 APS assemblies or railroad circuitry.

1726-2 MATERIAL

9 Refer to Division 10.

Item

Lashing Wire and Hardware

Lead-In Cable

Wrapping Tape

Section

1098-6

1098-9

1098-6

10 Furnish material, equipment and hardware under this section that is pre-approved on the
11 ITS and Signals QPL.

1726-3 CONSTRUCTION METHODS

13 For underground runs, install lead-in cable in 2" non-metallic conduit. For aerial installation,
14 wrap lead-in cable to messenger cable with at least 4 turns of wrapping tape spaced at
15 intervals less than 15" or lash lead-in cable to messenger cable with one 360° spiral of lashing
16 wire per 12".

17 Where railroad preemption is required, install lead in cable from signal controller cabinet to
18 railroad company furnished and installed lockable junction box.

19 Splicing of lead-in cable will be allowed only for runs in excess of 750 ft. Splice lead-in
20 cable in junction boxes or condulets on poles.

21 Test each complete loop system from the controller cabinet by using a megger to verify that
22 impedance from the loop system to the ground is at least 50 megaohms. After successful
23 completion of megger test, test loop system resistance using an electronic ohmmeter to verify
24 loop system resistance is less than 0.00885 ohms per foot.

1726-4 MEASUREMENT AND PAYMENT

26 *Lead-in Cable* (____) will be measured and paid as the actual linear feet of lead-in cable
27 furnished, installed and accepted. Measurement will be made by calculating the difference in
28 length markings located on outer jacket from start of run to end of run for each run.
29 Terminate all cables before determining length of cable run.

30 If markings are not visible, measurement will be point to point with no allowance for sag.
31 Twenty-five feet will be allowed for vertical segments up or down poles.

32 Payment will be made under:

Pay Item

Lead-in Cable (____)

Pay Unit

Linear Foot